AMENDMENTS TO THE CLAIMS

Please cancel pending claims 1-22, and 24-25.

Please add new claims 26-49 as follows:

26. (Newly Added) A computer-based method to version a node rage and locate a versioned node range in a storage architecture managing node ranges, said computer-based method implemented in computer readable program code stored in computer memory, said computer-based method comprising the steps of:

    a. receiving a node modification request for a node range from a database system;

    b. versioning said node range by copying, to a storage, a node range to which said node modification request is to be made and labeling said copied node range with an identifier;

    c. locating said labeled node range via said identifier and a hash on said node range; and

    d. outputting said located labeled node range.

27. (Newly Added) The computer-based method of claim 25, wherein said identifier is any of the following: a timestamp or a LSN.

28. (Newly Added) The computer-based method of claim 25, wherein said storage is a transient storage.

29. (Newly Added) The computer-based method of claim 25, wherein said node modification request is any of the following: a node insertion request, a node update request, or a node deletion request.

30. (Newly Added) The computer-based method of claim 25, wherein said method is implemented across a network.

31. (Newly Added) The computer-based method of claim 30, wherein said network is any of the following: a local area network, a wide area network, or the Internet.

32. (Newly Added) The computer-based method of claim 25, wherein said node ranges are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system.

33. (Newly Added) The computer-based method of claim 32, wherein said structured document is an XML document.

34. (Newly Added) A computer-based method to version a node range and to locate a versioned node range in a storage architecture managing node ranges via a node id range index, said each node assigned a node id value and a set of nodes forming a node range, each entry in said node id range index pointing to a node range and its range identifier, RID, said computer-based method implemented in computer readable program code stored in computer memory, said method comprising the steps of:

    a.   receiving a node modification request for a range;

    b.   versioning said range associated with said node modification request by shadowing nodes in said range to a Version Hash Table based on RID and assigning a time identifier to copies of said range;

    c.   locating a node in said shadowed range via said time identifier and RIDs; and

    d.   outputting said located node range.

35. (Newly Added) The computer-based method of claim 34, wherein said time identifier is any of the following: timestamp or LSN.

36. (Newly Added) The computer-based method of claim 34, wherein new readers, after a modification, access current nodes through a new RID.

37. (Newly Added) The computer-based method of claim 34, wherein previous readers access old nodes via the same RID and hashing the same RID to locate the shadowed copy in said Version Hash Table.

38. (Newly Added) The computer-based method of claim 34, wherein when modifications cause nodes in a range to be moved to a new RID, previous readers are redirected from the new RID to an old RID via a Redirection Hash Table.

39. (Newly Added) The computer-based method of claim 34, wherein when modifications cause nodes in a range to be moved to a new RID, previous readers are redirected from the new RID to an old RID via an index that describes where old versions are in said Version Hash Table.

40. (Newly Added) The computer-based method of claim 34, wherein said shadowed nodes are copied to a transient storage.

41. (Newly Added) The computer-based method of claim 34, wherein said method is implemented across a network.

42. (Newly Added) The computer-based method of claim 41, wherein said network is any of the following: a local area network, a wide area network, or the Internet.

43. (Newly Added) The computer-based method of claim 34, wherein, for range deletions, the range being deleted is moved to reserved RID RIDFF.

44. (Newly Added) The computer-based method of claim 43, wherein a reader hashes a Redirection Hash Table on RIDFF to find a correct Version Hash Table entry.

45. (Newly Added) The computer-based method of claim 34, wherein said node ranges are associated with hierarchical node data that is derived from any of: a structured document, a computer network, or a directory file system.

46. (Newly Added) The computer-based method of claim 45, wherein said structured document is an XML document.

47. (Newly Added) The computer-based method of claim 34, wherein said node modification request is any of the following: a node insertion request, a node update request, or a node deletion request.

48. (Newly Added) An article of manufacture comprising computer readable program code implementing a method to version a node range and to locate said versioned node in a storage architecture that manages node ranges via a node id range index, said each node assigned a node id value and a set of nodes forming a node range, each entry in said node id range index pointing to a node range and its range identifier, RID, said method comprising:

    a.   computer readable program code identifying a node modification request for a range;

b.   computer readable program code versioning said range associated with said node modification request by shadowing nodes in said range to a Version Hash Table based on RID and assigning a time identifier to copies of said range;

c.   computer readable program code locating a node in said shadowed range via said time identifier and RIDs; and

d.   computer readable program code outputting said located node range.

49. **(Newly Added)** An article of manufacture comprising computer readable program code implementing a method to version a node range and to locate a versioned node rage in a storage architecture that manages node ranges, said method comprising:

a.   computer readable program code identifying a request for node modification from a database system;

b.   computer readable program code copying, to a storage, a node range to which said node modification request is to be made;

c.   computer readable program code labeling said copied node range with an identifier; and

d.   computer readable program code locating said labeled node range via said identifier and a hash on said node range; and

e.   computer readable program code outputting said located labeled node range.